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ABSTRACT OF THE DISCLOSURE

2 In accordance with an aspect of the invention, a method of
3 forming a trench isolation region includes forming a trench within a
4 substrate. A silanol layer is formed to partially fill the trench and
5 then converted, at least some of the silanol, to a compound including
6 at least one of SiO_n and RSiO_n , where R includes an organic group.
7 An electrically insulative material is formed over the converted silanol to
8 fill the trench. In another aspect of the invention, a method of forming
9 a trench isolation region includes forming a trench within a substrate.
10 A first layer of at least one of Si(OH)_x and $(\text{CH}_3)_y\text{Si(OH)}_{4-y}$ is formed
11 to partially fill the trench. At least some of the Si(OH)_x if present is
12 converted to SiO_2 and at least some of $(\text{CH}_3)_y\text{Si(OH)}_{4-y}$ if present is
13 converted to $(\text{CH}_3)_x\text{SiO}_{2-x}$. Next, a layer of an electrically insulative
14 material is formed to fill the trench.

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